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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,129	03/01/2002	Wa-Hing Leung	P67677US0	2752

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EXAMINER

WARD, AARON S

ART UNIT	PAPER NUMBER
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2675

DATE MAILED: 01/15/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/085,129

Applicant(s)

LEUNG, WA-HING

Examiner

Aaron S. Ward

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to because there is no illustrated difference in the Figures between the Array LEDs and Path Breaking Diodes. The various labels and lines throughout the Figures are difficult to discern.

In Figure 1 there is no lead-line for reference numeral 18.

In Figure 2 the caption labeled "CASE:" erroneously indicates a range of 6.0V – 1.0V instead of 6.0V – 10.1V as disclosed in the specification.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference signs mentioned in the description:

Figure 3 is missing reference sign 11.

Figure 4 is missing reference signs 8 and 19.

Figure 5 is missing reference sign 19.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract is objected to for including the phrase "This invention provides."

4. The disclosure is objected to because of the following informalities:

Page 12, line 12 discloses that PMOS switches 23 and 24 are used on alternative paths to the device 22. However, was it intended that the specification refer to PMOS switches 25 and 26, instead of switches 23 and 24, for consistency with Figure 6?

Appropriate correction is required.

Claim Objections

5. Claims 1 and 3-5 are objected to because of the following informalities:

Claim 1, there is a lack of antecedent basis for "said power supply" on lines 5 and 7, "said switchable parallel path" on line 12, and "said array of lighting devices" on line 13.

Claim 3, there is a lack of antecedent basis for "said plurality of current paths" on lines 1-

- 2.

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Claim 4, there is a lack of antecedent basis for “the ends” on line 6, “said lighting device” on lines 8-9, and “the incoming voltage” on line 10. Furthermore, on line 11 the recitation “and to break” is unclear (should “and” be deleted, or should “and to break” be changed to “and breaking”?)

Claim 5, there is a lack of antecedent basis for “said switches” on line 10.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 1 recites the limitation “said series circuits” on line 15 and “the circuits” on line 16. Claim 4 recites the limitation “said parallel path” on lines 10-11. There is insufficient antecedent basis for these limitations in the claims.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Deese et al. (U.S. Patent No. 5,457,450).

As to claim 1, Deese et al. teaches a driving circuit 520 (see Figure 9) including connection means 612 to a DC supply 572. The circuit 520 includes a plurality of solid-state lighting devices 501-507 arranged in series with connection means 612, and switchable parallel current paths 530-535 from power supply 700 to an intermediate point along the series circuits 501-507 to form alternative series circuits. Current regulating devices 508, 509 are in circuit with the series circuits, and driving circuit 520 includes a voltage sensor 574, 578. Control means 582, 584 controls switches 576, 580 to reconfigure the array of LEDs 501-507 into alternative circuits (column 3, lines 11-17) in response to voltage changes (column 2, lines 20-30).

As to claim 2, the at least one switchable parallel current path is a plurality of separately switchable paths (see Figures 10B and 10C).

As to claim 3, the plurality of current paths contains a generally equated load (see Figures 10B and 10C, reference numeral 616).

As to claim 4, Deese et al. teaches a method of controlling a solid-state lighting array including sensing 574, 578 (Figure 9) a voltage supply 118, 120 through an array of solid-state lighting devices 501-507; providing a first serial path 588 (see also Figure 10A) through the solid-state lighting devices 501-507; providing at least one switchable parallel input 530-535 intermediate of the ends of the serial path 588; providing at least one current regulating device

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508, 509 in circuit with said lighting device 501-507. The method senses the incoming voltage 582, 584 and controls switches 576, 580 to break the serial path (Figure 10A) into at least two parallel paths (Figures 10B and 10C; reference numeral 616) each containing lesser lights than the serial path should the voltage drop below a pre-determined threshold (see abstract).

As to claim 5, Deese et al. teaches a circuit at least one serial path (Figure 10A) through solid-state lighting devices 501-507 (Figure 9); at least two alternative parallel paths (Figures 10B and 10C); at least one current regulating device 508, 509 in circuit with lights 501-507; switching means 576, 580 to switch circuit 588 from the serial path to a plurality of parallel paths (Figure 10B and 10C, reference numeral 616) containing a reduced load of lights in each path; and control means (582, 584) to control the switches 576, 580 in response to detected voltage (column 2, lines 20-30) in the circuit 520.

As to claim 6, Deese et al. teaches a method of providing a circuit 520 (Figure 9) containing lights 501-507, including arranging the lights 501-507 into a plurality of alternative circuits (see Figures 10A-10C) connected to at least one current regulating device 508, 509; and switching between the alternative circuits to increase or decrease the number of circuits/lights in each circuit (Figures 10A-10C) in response to variations in available power (column 2, lines 20-30).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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O'Brien (U.S. Patent No. 4,065,716) teaches an apparatus including a series connected array of LEDs including a constant current source connected to one end of the series.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron S. Ward whose telephone number is (703) 305-8992. The examiner can normally be reached on Monday - Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven J. Saras can be reached on (703) 305-9720. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

ASW

A handwritten signature in black ink, appearing to read "Steven J. Saras", is positioned above the printed name and title.

STEVEN SARAS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600